

**Potential application of CloudSat cloud classification maps and MODIS multi-spectral satellite imagery in identifying false rain from satellite images**

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Potential application of CloudSat cloud classification maps and MODIS multi-spectral satellite imagery in identifying false rain from satellite images Nasrin Nasrollahi, Kuolin Hsu, Soroosh Sorooshian Center for Hydrometeorology & Remote Sensing, Dept. of Civil & Environmental Engineering University of California Irvine In recent years, the emergence of various satellite-based precipitation products with high spatial resolutions and global coverage has resulted in new sources of uninterrupted precipitation estimates. However, due to lack of information on the associated uncertainties and reliability of these products, they are not well integrated into operational and decision making applications. Previous studies indicate that the performances of most satellite-derived precipitation products are higher during summer season compared to cold season precipitation, partially due to the fact that Passive Microwave (PMW) sensors do a better job in measuring convective systems. Comparing in-situ rain measurements with satellite precipitation data reveals considerable false alarm in satellite precipitation measurements in the presence of high cold clouds (e.g. Cirrus). In this study, application of multi-spectral satellite imagery from MODIS and CloudSat cloud classification maps is investigated to identify false rain detection in satellite precipitation products (e.g., TMPA, PERSIANN). Preliminary results suggest a significant improvement in detecting non-precipitating clouds in satellite precipitation products in comparison with radar based gauge adjusted data.